

CLAIMS

We claim:

1. A method of reducing hazardous emissions from a purified cumene hydroperoxide (CHP) solution, said method comprising diluting said purified CHP solution with x weight percent water to produce a mixture;
wherein $1 \leq x \leq 6$.
2. The method of claim 1 further including mixing said CHP-water mixture.
3. The method of claim 1 further including transporting said CHP-water mixture.
- 10 4. The method of claim 1, wherein $2 \leq x \leq 3$.
5. The method of claim 1, wherein said purified CHP solution is at least 80% CHP.
6. The method of claim 1, wherein said purified CHP solution is at least 88% CHP.
7. The method of claim 1, wherein said purified CHP solution is at least 90% CHP.
- 15 8. A method of depressing the freezing point of a purified cumene hydroperoxide (CHP) solution, said method comprising diluting said purified CHP solution with x weight percent water to produce a CHP mixture;
wherein $1 \leq x \leq 4$.
9. The method of claim 8 further including mixing said CHP-water mixture.
10. The method of claim 8 further including transporting said CHP-water mixture.
- 20 11. The method of claim 8, wherein $2 \leq x \leq 3$.
12. The method of claim 8, wherein said purified CHP solution is at least 80% CHP.
13. The method of claim 8, wherein said purified CHP solution is at least 88% CHP.
14. The method of claim 8, wherein said purified CHP solution is at least 90% CHP.
15. A composition comprising:
25 purified cumene hydroperoxide (CHP); and
x weight percent water
wherein $1 \leq x \leq 6$.
16. The composition of claim 15, wherein $2 \leq x \leq 3$.

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17. The composition of claim 15, wherein said purified CHP solution is at least 80% CHP.

18. The composition of claim 15, wherein said purified CHP solution is at least 88% CHP.

19. The composition of claim 15, wherein said purified CHP solution is at least 90% CHP.

20. A method of preparing a crude cumene hydroperoxide (CHP) solution for transport, said
5 method comprising:

providing crude CHP solution;

purifying said crude CHP solution to at least 80% CHP; and

producing a CHP-water mixture by adding x weight percent water to the purified CHP
solution,

10 wherein

$$0 < x \leq 6.$$

21. The method of claim 20 further including transporting said CHP-water mixture.

22. The method of claim 20 wherein $2 < x \leq 3$.

23. A method of obviating the seasonal adjustment of cumene hydroperoxide (CHP)
concentration in transporting purified CHP solutions, said method comprising:

adopting a standard concentration CHP solution;

producing a CHP-water mixture by adding x weight percent water to said standard
concentration CHP

solution, wherein $1 \leq x \leq 6$; and

transporting said mixture at all times of the year.

24. The method of claim 23, wherein said standard concentration CHP solution is at least 80%
CHP.

25. The method of claim 23, wherein said standard concentration CHP solution is at least 88%
CHP.

26. The method of claim 23, wherein said standard concentration CHP solution is at least 90%
CHP.

27. The method of claim 23, wherein $2 \leq x \leq 3$.